

Precision Digital Voltmeters, Analog Processors, and Converters

Precision Boards and Chipset for Embedded Panel Meter Applications

- PC-based operation
- Stand-alone operation
- Patented EPAD® Technology
- Compatible with industry standard LCD displays
- Simple setup
- Ready to use
- 4-1/2 to 6-1/2 digit display selection
- Scale to any parameter
- Up to 8 character unit display
- Ideal for systems with front panel displays

MB Series are +/-5 1/2-digit DVM boards designed for precision voltage measurement applications featuring +/-3 1/2 to +/-6 1/2-digit readout resolution. Applications include embedded digital voltmeters, precision bridge sensor monitors, laboratory data-logging, customized instrumentation displays, portable field equipment and calibration. MB Series boards are functional Digital Voltmeters consisting of ALD500/ALD500R and ALD521D/ALD523D DVM chipset with associated support circuitry. Each board, with included software, is a data acquisition system that can be used in embedded production applications as well as engineering evaluation purposes.

Three operating Modes can be achieved with different components and configuration: Mode A -calibrated reference mode, primarily for measurements against a calibrated reference voltage as in precision voltmeter applications.

Mode B -ratio-metric mode, intended for measurements against a ratio-metric reference voltage such as in sensor bridge applications.

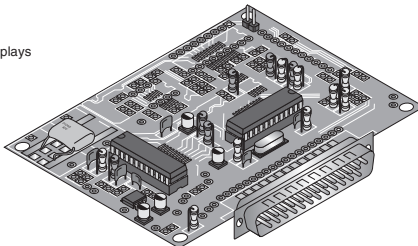
Mode C -display only mode, displays and converts serial data up to 31 serial bits plus sign bit -compatible with most industry standard serial binary input data formats.

MB201 supports Mode A and B; and MB203 supports Mode A, B and C. In addition, the MB203 also directly interfaces with most industry standard 1 x 16 or 2 x 16 LCD or VFD Character Display Modules.

Each board has provision for PC interface (DB25), includes DOS setup, operating and calibration software, BASIC programming interface modules, and input resistor divider network for input scaling. DC inputs are single ended or optionally fully differential, and features automatic zero and automatic input polarity detection.

MB201 and MB203 feature optional sockets for input pre-amplifier and 2-input analog switch.

All boards are shipped with calibration certificate including optional user field calibration instruction and software. The MB203LCD consists of a 2 line x 16 Character Display Module with cable to interconnect with MB203A, which together forms a stand-alone Digital Panel Meter requiring only +5 VDC supply, and optional PC connection for setup changes.



MB201

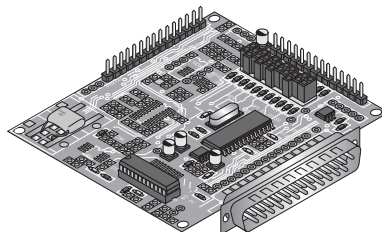
MB201 Key Features and Specifications:

- PC/ uP based operation
- Direct Full Scale Analog Input Range: +/- 2.00000VDC (optional +/- 20.0000VDC)
- Input Impedance: 1 G Ohm min, 100 G Ohm typical (+/- 2.00000V version)
- Input Impedance: 10 MEG Ohm nominal (+/- 20.0000V version)
- Resolution: +/- 1-digit or +/- 10uV @ Vin = 1.00000V (16x input averaging)
- Accuracy +/- 0.02% (after 2 hour warm-up).
- Linearity +/- 0.01% full-scale (23°C, +/- 1°C).
- Conversion sample rate: 3/sec typical (adjustable from 1/min. to 10/sec.)
- Over-voltage Protection: 20 VDC in +/- 2.00000V version.
- Over-voltage Protection: 200 VDC in +/- 20.0000V version
- Smart (Adaptive) Filtering.

MB203A

MB203A Key Features and Specifications:

- Stand-alone or PC/ uP based operation
- Direct Full Scale Analog Input Range: +/- 2.00000VDC (Optional +/- 20.0000VDC)
- Up to 3 sets of user programmed scaling and unit conversions
- Up to 3 Sets of Full Scale Display Ranges: +/- 9999999 (up to 7 full digits)
- Conversion Sample Rate: 3/sec (user selectable from 0.016 to 10/sec.)
- Input Impedance: 1 G Ohm min, 100 G Ohm typical (+/- 2.00000V version)
- Input Impedance: 10 MEG Ohm nominal (+/- 20.0000V version)
- Over-voltage Protection: 20VDC in +/- 2.00000V version.
- Over-voltage Protection: 200 VDC in +/- 20.0000V version
- Power Supply: +4.5 to +5.5V max @ 9mA max.
- Accuracy: +/- 0.02% (after 2-hour warm-up).
- Linearity of +/- 0.005% full-scale (23°C, +/- 1°C).



ALD ± 5 1/2 DIGIT DVM (DIGITAL VOLTMETER) BOARDS FULLY ASSEMBLED, TESTED AND CALIBRATED

- Full Scale Input w/direct PC Interface
- Nom. Supply Voltage 5V
- +/- .02% Accuracy
- 3 Conversions/Second Default
- Max Supply Current 9mA
- 0 to 50° C Temperature Range

For quantities of 250 or more, call for quote.

| MOUSER STOCK NO. | ALD Part No. | Description | FS Input Range (DCV) | Input Imp. (min) (Ohm) | Conv./Sec (Min/Max) | Linearity (Max) (%) | Display Settings (Max) | Scale Factors (Max) | Price Each | | |
|------------------|--------------|---------------------------------|----------------------|------------------------|---------------------|---------------------|------------------------|---------------------|------------|-------|-------|
| | | | | | | | | | 1 | 25 | 100 |
| 585-MB201A2V | MB201A2V | ±2 DCV | ±2 | 1G | 0.017 / 10 | ±0.01 | ----- | ----- | 67.23 | 62.75 | 60.51 |
| 585-MB201A20V | MB201A20V | ±20 DCV | ±20 | 10MEG | 0.017 / 10 | ±0.01 | ----- | ----- | 67.23 | 62.75 | 60.51 |
| 585-MB203A2V | MB203A2V | ±2 DCV + LCD Display Interface | ±2 | 1G | 0.008 / 10 | ±0.005 | 3 | 3 | 79.40 | 74.10 | 71.46 |
| 585-MB203A20V | MB203A20V | ±20 DCV + LCD Display Interface | ±20 | 10MEG | 0.008 / 10 | ±0.005 | 3 | 3 | 79.40 | 74.10 | 71.46 |

ALD DVM BOARD ACCESSORIES

For quantities of 250 or more, call for quote.

| MOUSER STOCK NO. | ALD Part No. | Description | Dim. (IN) | Price Each | | |
|------------------|--------------|--|----------------|------------|-------|-------|
| | | | | 1 | 25 | 100 |
| 585-MBCDROM | MBCDROM | Design Manual/ Software Kit for MB Boards | Standard CD | 18.00 | 16.80 | 16.20 |
| 585-MB203LCD | MB203LCD | 2x 16 Character LCD Module with cable/connector for MB203 Board | 3.15x1.42x0.43 | 44.10 | 41.16 | 39.69 |
| 585-MB203LCD-1 | MB203LCD-1 | 2x16 Character LCD Module (green LED) with cable/connector for MB203 Board | 3.15x1.42x0.43 | 44.10 | 41.16 | 39.69 |

ALD 17/18 BIT, PLUS SIGN, DUAL SLOPE INTEGRATING ANALOG PROCESSORS

- System Integrating A/D Processor
- Max 1mA Supply Current
- Typ. Input Current 2pA
- Temp. Range, 0 to 70° C
- Nom. Supply Voltage: +/-5V

◆ Surface Mount Device

For quantities of 250 or more, call for quote.

| MOUSER STOCK NO. | ALD Part No. | Description | Package | End Point Linearity (Max)(%) | Resolution (± Bits) | Zero-Scale Error (Max) (ppm) | Zero-Scale Tempco (Max)(ppm/C) | Full-Scale Tempco (typ) (ppm/C) | Full-Scale Rollover Error (typ) (%) | Price Each | | |
|---------------------|-----------------|------------------------|------------|------------------------------|---------------------|------------------------------|--------------------------------|---------------------------------|-------------------------------------|------------|------|------|
| | | | | | | | | | | 1 | 25 | 100 |
| 585-ALD500AUPCL | ALD500AUPCL | 18 bit | DIP-16 | 0.005 | ±18 | 25 | 0.3 | 1.3 | 0.005 | 8.33 | 6.00 | 5.29 |
| 585-ALD500AUSCL | ALD500AUSCL | 18 bit | SO-16 | 0.005 | ±18 | 25 | 0.3 | 1.3 | 0.005 | 8.33 | 6.00 | 5.29 |
| 585-ALD500RAU-10PEL | ALD500RAU-10PEL | 18 bit w/ 10 ppm V Ref | DIP-20 | 0.005 | ±18 | 25 | 0.3 | 1.3 | 0.005 | 9.42 | 7.48 | 5.99 |
| 585-ALD500RAU-10SEL | ALD500RAU-10SEL | 18 bit w/ 10 ppm V Ref | SO-20 | 0.005 | ±18 | 25 | 0.3 | 1.3 | 0.005 | 9.42 | 6.80 | 5.99 |
| 585-ALD500RAU-20PEL | ALD500RAU-20PEL | 18 bit w/ 20 ppm V Ref | DIP-20 | 0.005 | ±18 | 25 | 0.3 | 1.3 | 0.005 | 8.74 | 6.60 | 5.55 |
| 585-ALD500RAU-20SEL | ALD500RAU-20SEL | 18 bit w/ 20 ppm V Ref | SO-20 | 0.005 | ±18 | 25 | 0.3 | 1.3 | 0.005 | 8.73 | 6.30 | 5.55 |
| 585-ALD500APCL | ALD500APCL | 17 bit | DIP-16 | 0.01 | ±17 | 30 | 0.35 | 1.3 | 0.008 | 7.60 | 6.30 | 5.26 |
| 585-ALD500ASCL | ALD500ASCL | 17 bit | SO-16 | 0.01 | ±17 | 30 | 0.35 | 1.3 | 0.008 | 6.91 | 5.48 | 4.39 |
| 585-ALD500ASWCL | ALD500ASWCL | 17 bit | Wide SO-16 | 0.01 | ±17 | 30 | 0.35 | 1.3 | 0.008 | 6.91 | 5.48 | 4.39 |
| 585-ALD500AUSWCL | ALD500AUSWCL | 18 bit | Wide SO-16 | 0.005 | ±18 | 25 | 0.3 | 1.3 | 0.005 | 8.33 | 6.00 | 5.29 |